

THE INTERNATIONALIZATION OF HIGHER EDUCATION – LOCAL TENDENCIES AND REALITIES IN THE EDUCATION OF STUDENTS OF ENGINEERING AND NATURAL SCIENCES IN A MEXICAN UNIVERSITY – A CASE STUDY

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Abstract

The present work is part of a greater research project which is currently in the stage of exploration. The project aims at exploring the education of students abroad seen from their perspective during their stay abroad.

Since the end of the 20th century, higher education institutions (HEI) in Mexico have reinforced various strategies to meet national and international requirements implicated by processes of globalization. For that reason, some HEI have been reacting making use of the opportunities to implement students exchange programs, to prepare their students in foreign countries.

Based on a literature review, the present research aims at giving answers to questions as the following: What characterizes the internationalization of higher education in a Mexican university? What are the tendencies and in which way do they influence our local educational sector?

The special interest of this exploratory research work is focused on case studies in which statements of pre-graduate students of engineering and natural sciences studying in European universities give a particular insight into the process of internationalization and some of its consequences. This work intends to describe the situations with which these students are confronted during and after a stay abroad as well as to retain the students' perspective about the personal and professional conditions and circumstances they experienced during and after their stay abroad. In these interviews answers can be found to questions regarding motivations, reasons and objectives for studying abroad, special situations. Moreover, there are questions about the students' expectations when coming back, about the types of situations and circumstances they found themselves confronted with when coming back to their educational environment in Mexico.

With all this we hope to be able to contribute to improve educational processes, and to make findings from the point of view of its main actors as well as to support administrative decision making the moment when students enter academic exchange programs.

Keywords: student mobility, internationalization, higher education.

1 INTRODUCTION

Since the nineties of the last century, higher education institutions (HEI) in Mexico have reinforced various strategies to meet national and international requirements implicated by the processes of globalization. They tend to become places where the acquisition and use of competencies are assured, where research is conducted that is oriented towards the use and commercialization of knowledge, where social opportunities are distributed for later integration in the labor market. Therefore these institutions are increasingly oriented towards helpful and immediate benefits for the market using the opportunities to implement academic mobility programs to prepare their students in foreign countries.

Based on a brief literature review about the internationalization of higher education, we are looking for answers to questions as the following: Did the home institution keep in touch with the students and did it provide advice during the students' stay abroad? Did the host institution show an attitude of acceptance and support? Was there any kind of non-attention from coordinators and professors of the home and host institutions? The special interest of this exploratory work is focused on case studies

with statements from undergraduates. We strive to retain the students' perspective about their personal conditions and circumstances as well as the experiences made during the stay abroad.

We aim at revealing individual cases, demonstrating educational processes from the point of view of its main actors as well as findings that are behind each and every case. The students can provide valuable information for political and administrative decision making once they are back in the country.

2 THEORETICAL FRAMEWORK

In what follows we present a brief literature review focusing on the terms internationalization and globalization of higher education.

Commonly, the terms internationalization and globalization are used synonymously. In fact, they are related, but not the same. There are many definitions of internationalization of higher education (HE) and they are not consistent. The same holds true for the term globalization. For the purpose of this project we adopt a definition that characterizes internationalization as the process through which institutions integrate an international dimension to their teaching, research and service [1], [2].

This process also includes the intercultural dimension that is inseparable from the identity and culture of the institutions and their agents. HEI focus on different approaches to integrate the international framework. The author mentions that "the process approach stresses the integration of an international and/or intercultural dimension into academic programmes as well as the guiding policies and procedures of an institution. A major concern in this approach is the need to address the sustainability of the international dimension. Therefore, emphasis is placed on programme aspects as well as organisational elements such as policies and procedures" [20]

Altbach and Knight define globalization as the context of economic and educational tendencies in the 21st century. Internationalization includes the policies, academic procedures of the systems, institutions and individuals that enable them to compete within the international academic community [1], [2]. According to that, internationalization can be understood as the strategy of globalization that leads to a new educational and occupational culture which induces organizational changes in HEI with sometimes unexpected results and consequences.

HEI are more and more oriented towards helpful and immediate benefits for the labor market veering away from a humanistic education given that it does not produce immediate benefits. As a result, some HEI react – in a rather pragmatic way – by making use of the opportunities given by the supply, in its case the competition, and implement student mobility programs and high quality post-graduate programs abroad. Thus, "higher education did not remain unaffected by globalization... maintaining its excellence... integrating an international and intercultural dimension into its teaching, research and service functions" [10].

Some of the results are: a) an increase in the demand for HE; b) lifelong learning; c) integration of sustainability; d) strengthening of employment e) internationalization of curricula including academic mobility; f) orientation towards competition and quality; g) implementation of new teaching and learning methods. HEI are going to develop their new visions oriented towards service and they are going to understand themselves as representatives of a democratic knowledge society. Important key factors are the facilities of HEI, the diversification of courses of study and permeability of domains, staff structuring and new occupational structures as well as establishing the respective organizational frameworks. Therefore emphasis is put on the development of competencies among professors and students as well as changes in the organizational development of the universities.

Gacel Ávila points out that the existence of an important basis of prepared researchers of international quality is [a positive element] for the internationalization process of HEI in Mexico. On the contrary, there is the commodification of, for example, postgraduate programs where the global market dictates national policies and where local providers of HEI are increasingly faced with the trade of different higher education services. The increase in academic mobility of students without knowing the medium- to long-term consequences for the students themselves and their contributions for the country of origin can be considered an example. Mentions that the educational strategies of this century should start looking for education standards that are competitive at international level and that at the same time adjust to local conditions.[12], [13]

Thus, the Education Sector Program 2007-2012 of the Ministry of Education states among its objectives to "increase the quality of education so that students improve their educational level, have the means to access better welfare services and contribute to national development". It names as one

of its action strategies: “promote the internationalization of Mexican higher education and its institutions” and plans to integrate international elements in academic activities to improve and strengthen educational quality as well as academic competitiveness [23]. This action is only a part of public policies. By now they also encompass resolving issues like the regulation of the transnational sector, to ensure the quality of educational services, to improve the recognition of degrees and to establish an association with inter- and intraregional productive sectors as it [7], [8].

There are many agencies and programs of international cooperation with the Spanish Agency for International Development Cooperation (Agencia Española de Cooperación Internacional – AECI), the International Association of Universities (IAU) and the German Academic Exchange Service (Deutscher Akademischer Austauschdienst – DAAD) being the most prominent among them. Regional cooperation is one of the aims and it should not go unmentioned that even though there exists a growth in structural bases and investments, some regions in Latin America and the Caribbean develop more than others. Unfortunately the gaps expand between minimal technological capacities and the quantity and quality of institutions that provide the basis for educating researchers and staff to sustain an increase of knowledge [9].

Undoubtedly, external cooperation is essential. Nonetheless, advisors of the World Bank recommend “... that it is very important that Latin America not only turns outward but also turns to intraregional cooperation”[6]. The last mentioned was reaffirmed at the Regional Conference of Higher Education in Latin America and the Caribbean (Conferencia Regional de Educación Superior de América Latina y del Caribe – CRES) in the CRES declaration “National, regional and institutional policies must be aimed fundamentally to achieve a transformation of the types of relationships connecting groups of academic researchers and the users of knowledge - whether companies, public services or communities - so that social needs and economic requirements are in line with academic capacity, setting the lines of priority research”[5].

3 METHODOLOGY

“Memories of life are not a reliable source when it comes to finding the truth... What really happened is reflected in subjective memories and interpretations. However, the more of these interpretations are expressed, the more the facts are revealed and one gets closer to the truth.” [16].

For its research perspective, the present study with its interest in subjective views can be considered – according to the previous quote – associated to Phenomenology (H.-G. Gadamer; A.Schütz and others) and for its description of processes of the construction of social situations it is oriented in constructivism as it follows the tradition of K. Gergen, questioning social conventions that influence in our perspectives and everyday knowledge.

This exploratory work is based on a mixed method design: quantitative-descriptive at the stage of data collection using the design of a semi-structured questionnaire. As to the qualitative part, semi-structured interviews are conducted and the data will be analyzed and interpreted. Given its character as an exploratory study the number of subjects is limited and through the analysis of gathered data we hope to construct new hypothesis. The first descriptive stage involves a series of semi-structured questionnaires in written form sent by e-mail [11].

The first questionnaire contains nine open questions that are given below:

1. At this point, how do you feel in your new university environment?
2. How do you consider your stay abroad regarding professional benefit?
3. Which differences have you been able to detect among the professors abroad and Mexican professors regarding for example teaching methods, expertise to give lessons, interaction with the students, motivation for the subject, attention towards the student.
4. How do you describe yourself as a Mexican student abroad?
5. How would you describe other Mexican students abroad?
6. How would you describe the foreigners as a student and as a person?
7. What are your impressions of the university culture abroad?
8. Can you describe your expectations of your stay abroad both for your private and your professional life?
9. The mobility program makes an impact on academic education. How does it impact on you?

The second part encompasses the interviews conducted in the country where the students realize their studies – one halfway through their stay abroad in January 2012 and another one on their return to Mexico in August/September 2012. This interpretative part of the study is aimed at comprehending and comparing the cases to find and document common experiences in order to come up with a typological classification.

In terms of generalizing the data we make sure to show detailed descriptions of the cases that can be representative to form a typology including also contradictory cases. We are aware of the restrictions when it comes to generalize data, but we refer to the internal validity focusing on the plausibility of the interpretations and generalizing them cautiously as far as possible to other similar cases. As a strategy to validate the gathered data we will triangulate the interpretations of the data of both stages [11]. The experiences lived and expressed in words, or more precisely in the language, only have "... their true existence in the fact that in them the world is represented" [14].

4 PRELIMINARY RESULTS

Given the current status of the project, the results of the first stage are still limited and allow only a reduced presentation of the description of the subjects and their first experiences abroad.

4.1 Description of the subjects

For this part of the study a group of 17 students was invited. Together they participated for 6 months in an intensive course of linguistic and cultural preparation with a total of 180 hours. This course was an extra-curricular activity that took place during the normal semester before the students' departure. The group consisted of students of different fields: biotechnology, chemistry, electrical engineering, electromechanics, mechatronics, systems engineering. Participation of male students outweighed the participation of female students with 59 % to 41 % respectively. The age of the students ranged from 19 to 22 years and they were enrolled at their respective faculty in the 5th to 8th semester. All students are currently enrolled in a University of Technology or a University of Applied Sciences participating in an exchange program of DAAD and UANL (Universidad Autónoma de Nuevo León).

4.2 Students' housing situation

Most of the students live in dormitories or apartments which has the advantage of being in contact with other foreign students, speaking the foreign language and being in contact with the other and even more cultures. We do not have notice of any economic problems. The engineering students receive a dual financial aid from DAAD and CUMEX – a benefit that other students do not have which sometimes limits them economically.

4.3 Environment in the host institution and motivation for their studies

The students report that "it feels very different from Mexico, maybe because of the language and the people..." (I003) and another student describes the new environment as "somehow demanding" and feels "a bit stressed out, but to be honest, all my classes impress me so that I don't mind to study..."(I002).

50 % of the participating students state that they received a warm welcome. Most describe their feelings like the following student: "I feel very good in this new university. It's a very different environment from that at the university in Monterrey with a lot of extra-curricular activities. I like that a lot. (I001)". Likewise, another student reports on greater flexibility when it comes to schedules which allows him/her to engage in different extra-curricular activities: "The environment is quite comfortable. Classes here are 2 consecutive hours and a few times (1 or 2) a week. I like the convenience of my schedule... I can do a lot of things." (I008)

It seems the students feel academically freer as well as personally. An experience they enjoy: "To study subjects in another language has helped me a lot in my personal development. It is a new challenge for me and I appreciate it very much. It has brought me into contact with new methods of studying, new people and culture" (I010).

4.4 Attention from the teachers, teaching methods

A student mentions that "... the classes are very interesting. Teachers always have their classes prepared..." and similarly another student says that "... they explain their classes, they are on time, ask for questions at the end of the class, they have a lot of expertise" (I005). Despite all that, it is the language that demands more effort and "the only difficulty is memorizing all the technical terms of every class to be able to understand them a hundred percent" (I004).

When asked about their relationship to the professors it shows that "here most teachers see their students only once a week so that the relationship is less personal." A situation that can be changed when the student approaches the teacher and asks: "... but if you approach them, they are very responsive and resolve your doubts..." (I005).

A student tells that in seminars (classes) professors "here tend to resort to the socratic method, like to oblige the students to think for themselves and not simply give them the summarized or already 'digested' information" (I008).

Another student also mentions the difficulty of the level of understanding: "I think... their classes have a very advanced content for a 'bachelor' level" and further on comments on his/her fellow students that "they are very hardworking, more than usual. All of them have a very advanced level when it comes to knowledge. They focus very much on studying the theory,..." (I010).

For now, it can be said that in the European environment university levels are different (if universities already have restructured their curricula within the Bologna Process). The length of study to obtain a first academic degree (bachelor's degree) is three years and for a master's degree it is two more years. So if a student of the 6th semester joins classes of a similar level in the host institution, basically he or she finds him-/herself in the last semester of his/her course of studies. That can turn out difficult depending on the progress of the class, knowledge and professional experiences in comparison to the home institution. Here (in this case-study) only a few students have completed an internship until the 6th semester.

5 PRELIMINARY CONCLUSIONS

As already mentioned, the present work forms part of a research project in progress that is currently at the exploratory stage. The project aims at investigating students' education abroad seen from the perspective of its integration in the university environment in the home country Mexico and the problems that it implicates. The study explores the cases of a group of 17 students that are studying abroad and has the objective to describe the problems that might be implicated. The work is based on gatherings of perceptions about the mobility students' education and experiences abroad. The gathered data will be structured according to the following aspects: 1) personal factors such as access or integration into students' curriculum, motivations for the study abroad, information and contacts for the participation in the mobility program, personal and professional expectations, support received at the moment of departure and return to the home university. 2) factors of development, for example personal and professional development on the students' return, circumstances before and during the integration into their curriculum abroad and on their return. 3) qualification of students abroad in accordance with the Mexican regional and student context. 4) institutional strategies to preserve the students' experiences, their integration in research projects, the preparation not only linguistically but also culturally for such a stay abroad.

Based on gathered data some experiences of the participants become apparent:

- 1) Personal factors such as the increase of personal autonomy and academic enhancement, changes in self-perception, greater tolerance, economic planning, ability to live together, positive and negative aspects of the experience and evaluation of the stay abroad regarding frustration, loneliness in moments of sadness, knowledge of the own language and culture, as well as the realization of a dream.
- 2) Factors of development such as generic capacities, technological capacities, self-organized-learning, teamwork.
- 3) Structuring of curricula and length of undergraduate-studies show differences as compared to the home country.
- 4) There are no medium to long-term strategies on how these students can share their experiences and the knowledge they acquired abroad with other students and professors. On the other hand,

there are no formal strategies either on how to integrate these students into research groups and projects or job performances that allow them the application and passing on of the acquired knowledge. This means a waste of academic resources and productivity if the students cannot share their knowledge with their fellow students. This circumstance might reflect in economic implications in the region right up to the country if knowledge and experiences are not preserved even though the students show motivation, willingness and skills to contribute and return knowledge to the country.

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